

**CLAIMS**

5 1. Microwave mixer-dryer-reactor for industrial use, characterised in that it is composed of:

- 10 - a horizontal cylindrically shaped, double-sleeved mixing drum (7), which is provided with a loading mouth (8) located on the upper part of said mixing drum (7) where the products to be mixed are introduced, with a discharge mouth (9) for discharging the product, with an inspection door (10) for the product located on the upper part of the mixing drum (7), with a system (11) for adding liquids to the mixture, with intensifiers (17) arranged and inserted radially on said drum (7), and with an airing mouth (16) for airing the mixtures, the loading and discharge mouths (8), (9) having locks or valves with a security system (12) which, in case of accidental opening of said locks or valves, stops the mixer-dryer-reactor and interrupts the process;
- 20 - a mixing spindle (6) coupled on one side of the reducer (4) through a connection (5) and rested on the other side on the mixing drum (7), said mixing spindle (6) having mixing blades (14) attached, being said mixing spindle (6) in the shape of a hollow tube, closed at one end and open at the other end, through the inside of which microwaves are sent and distributed from the generator (13) to the product, which are introduced through the open end of said mixing spindle (6) and enter into contact with said product through the radial holes (15) bored in the mixing spindle (6);
- 30 - a support bed (1) for the mixer-dryer-reactor in which the mechanisms, traction motors and connections of said mixer-dryer-reactor are located;
- 35 - a microwave generator apparatus (13) provided on the open end of the mixing spindle (6) which sends microwaves to the product through the inside of the hollow of said mixing spindle (6).

40 2) Microwave mixer-dryer-reactor for industrial use according to claim 1, characterised in that the mixing spindle (6) is provided with some pin holes (15) bored into the outer surface of said mixing spindle (6), said holes (15) having a circular or rectangular shape and said holes (15) being distributed along the mixing spindle (6), so that the microwaves generated by the microwave generator (13) coupled on the open end of said mixing spindle (6) reach the product through said holes (15) of said mixing spindle (6).

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